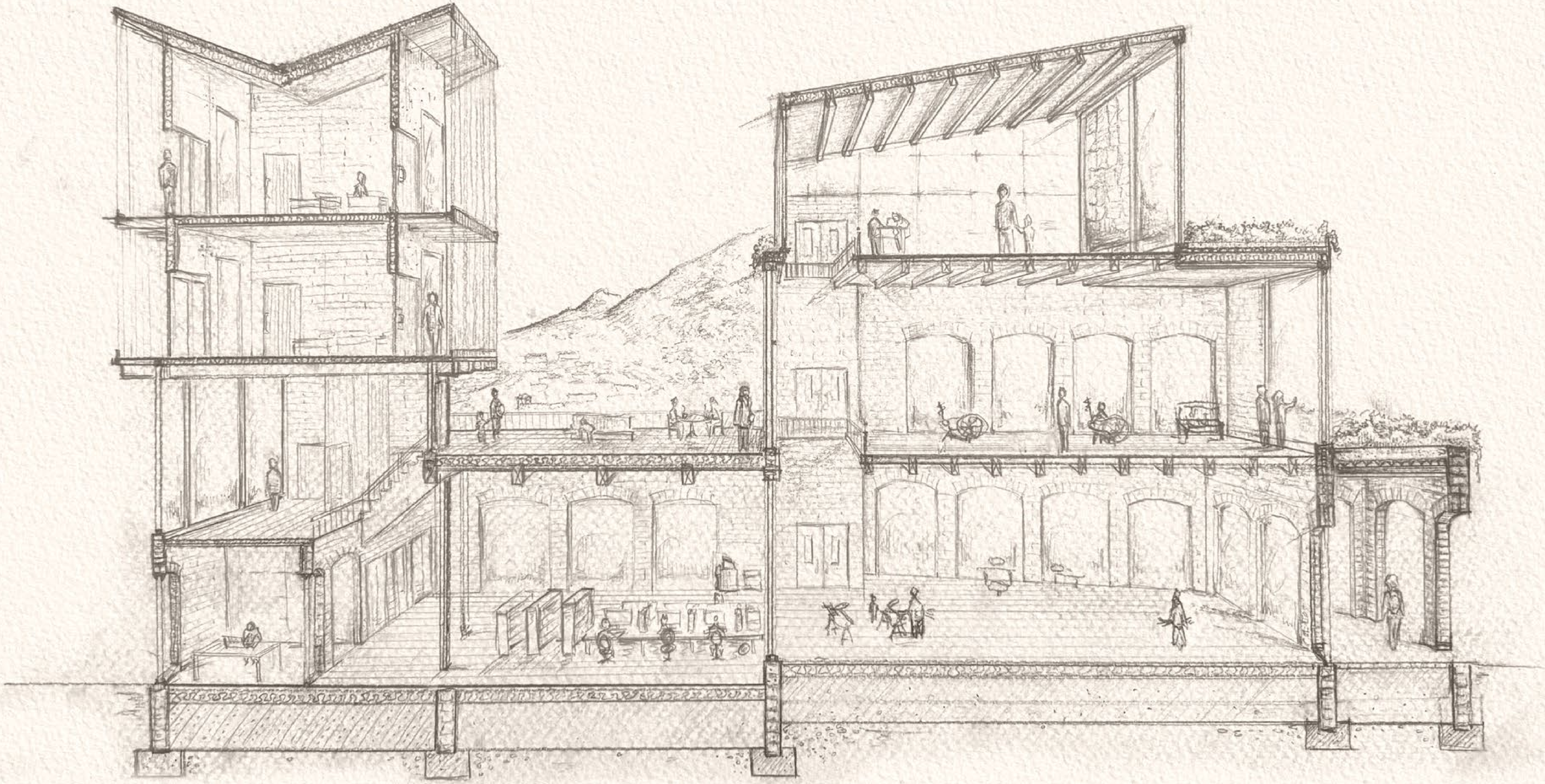
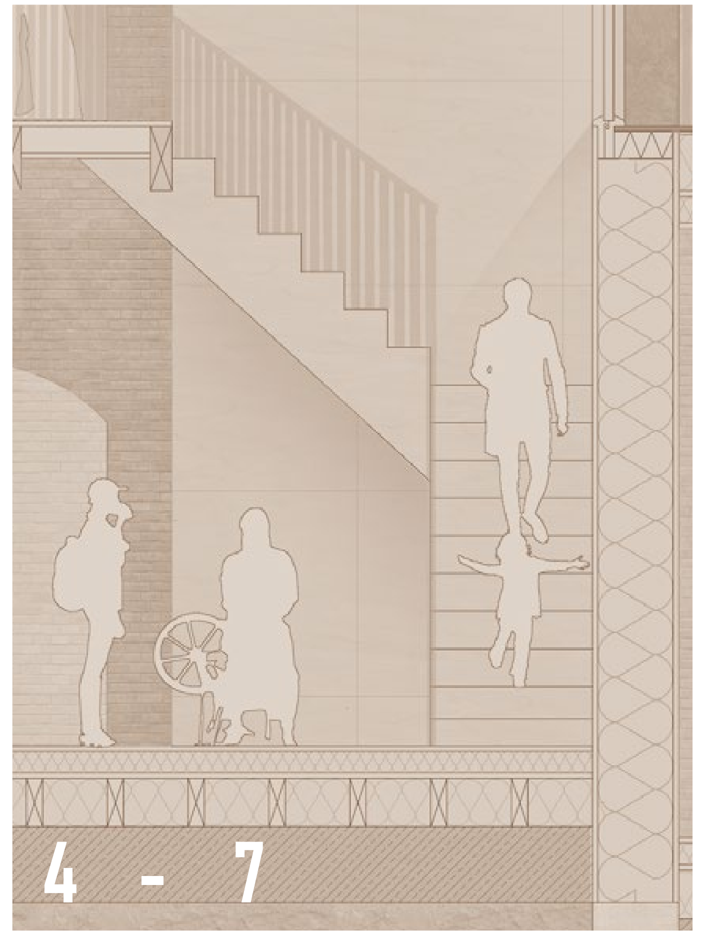
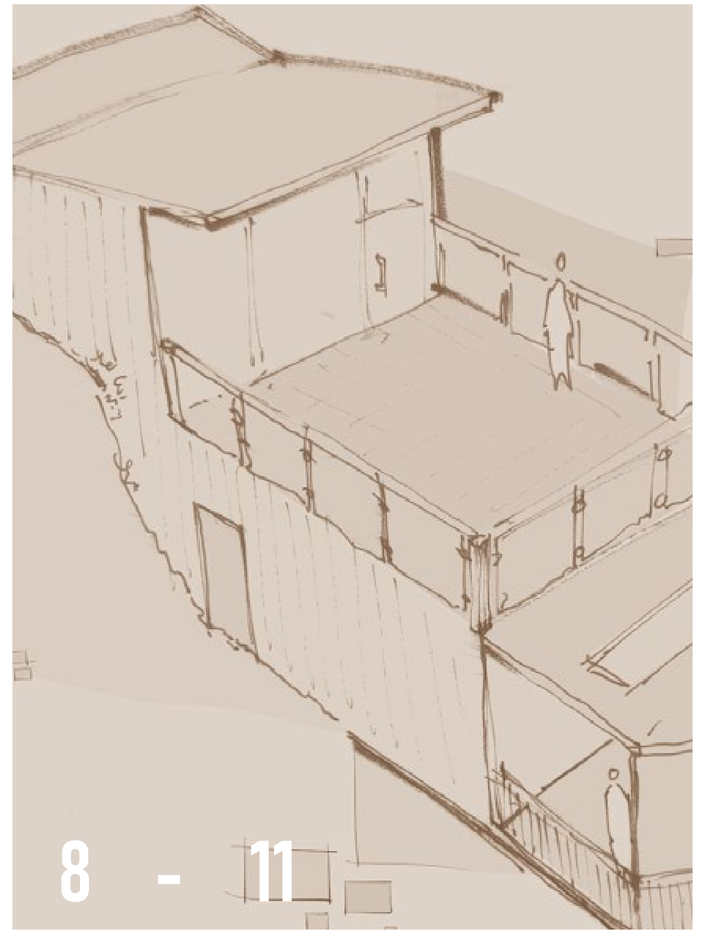


# Alexander Murray

## Part I Architecture Portfolio









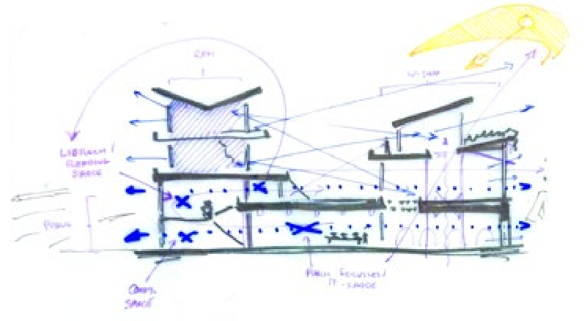


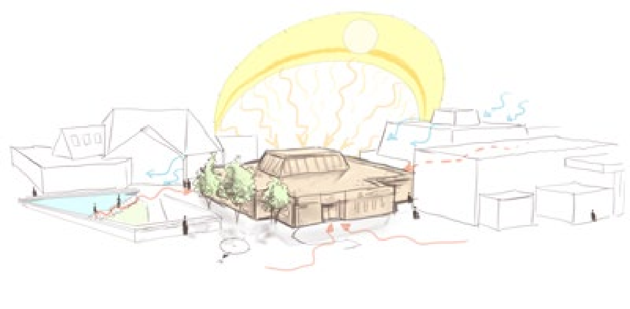
## **Studioworks 3A (Sept '24-Jan '25)** - Grade: B2

My first semester project of stage 3 was based in Fort William. The site I was assigned currently accomodates a library.

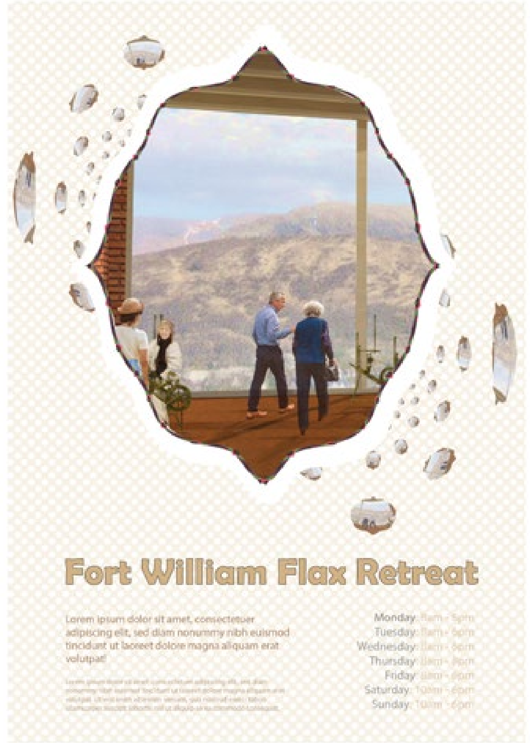
This building is important to Fort William's town centre - not just as a service - but also as a community space. However, in the overall context of the High Street, the current structure is unsuccessful in utilising the importance of this moment. There lies an opportunity in this space to create something special - as this structure would be tourists' first impression of the town up close when arriving from the train/bus station.

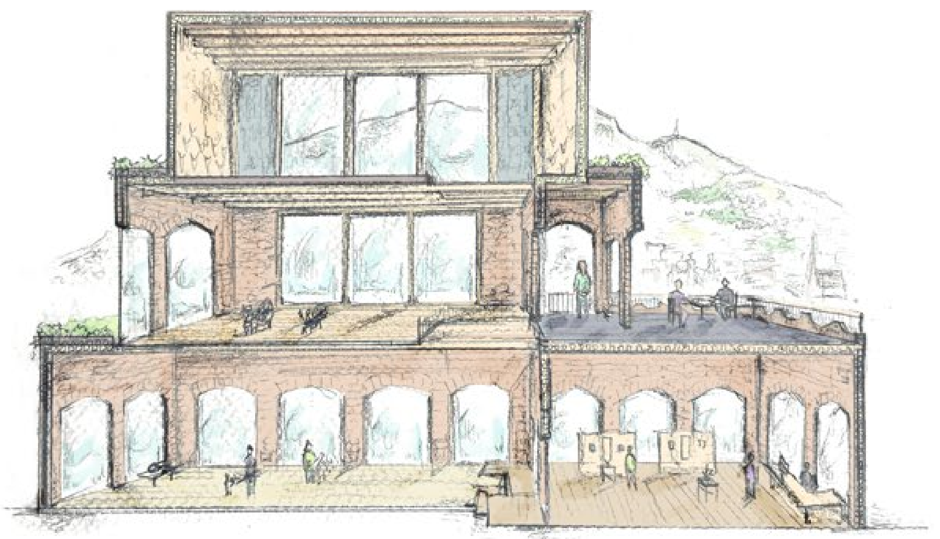
This project revolves around the concept of a '**Life-Long Learning Retreat**' - which is comprised of a large workshop area (the core element of the building), a residential space which can accomodate ~15 people, and a public space which contains very similar elements to that of the existing library (i.e. community space, dedicated study spaces, IT area, etc.). I chose flax as my material for the learning retreat, as flax is a soft, lustrous, flexible plant which can be cultivated for both its fiber and seeds. When used to create linen, it is a fairly beginner friendly material due to its natural softness and durability, which can be utilised to teach useful skills.

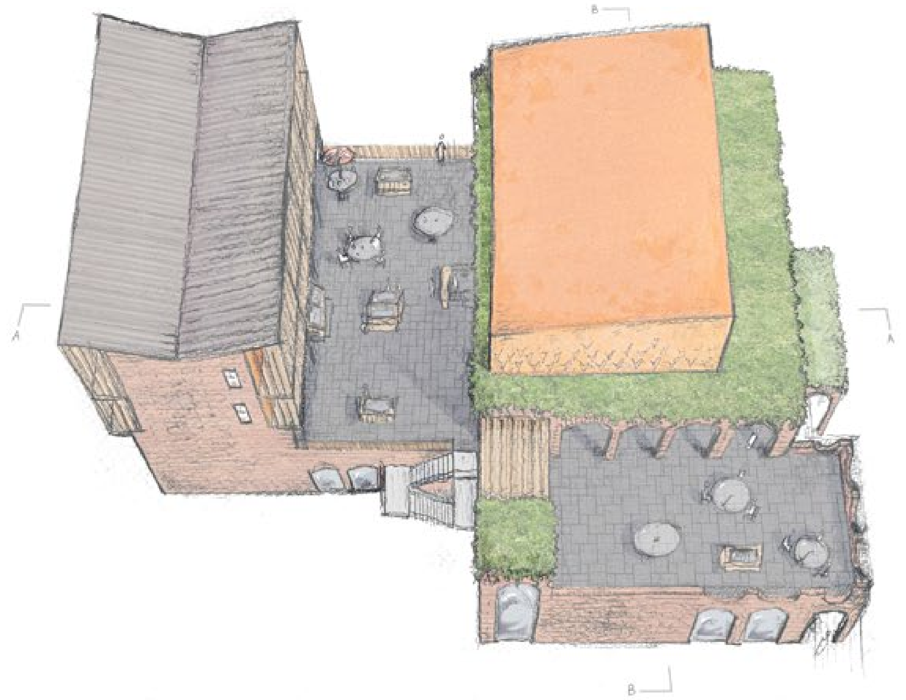


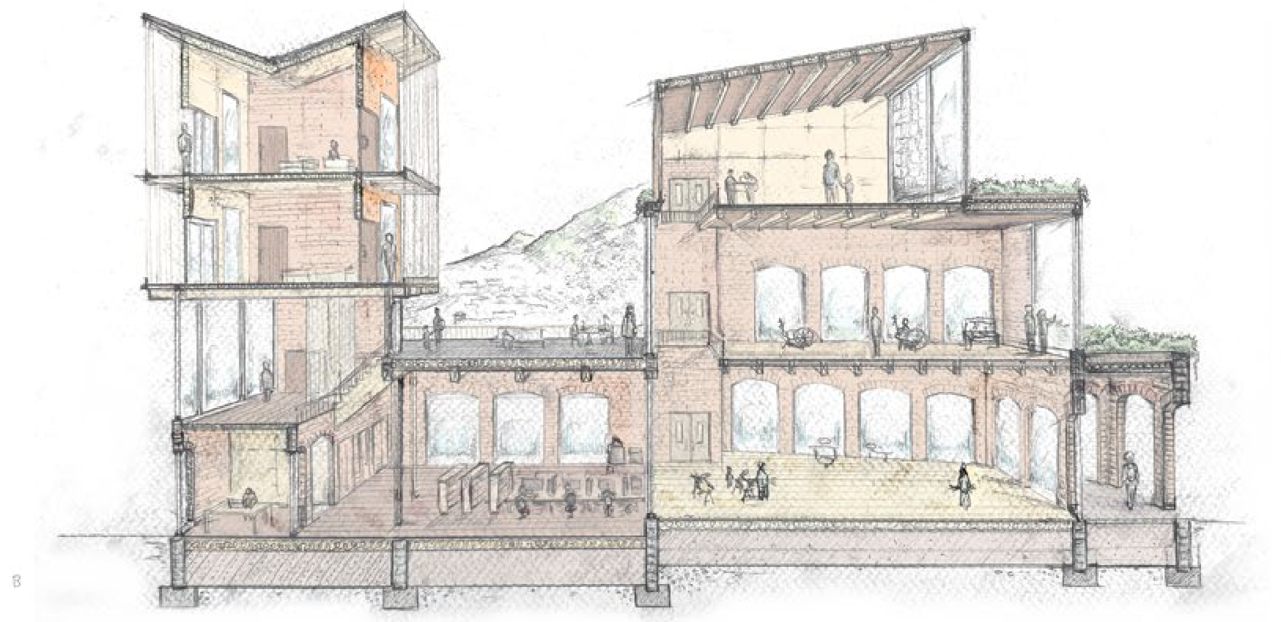




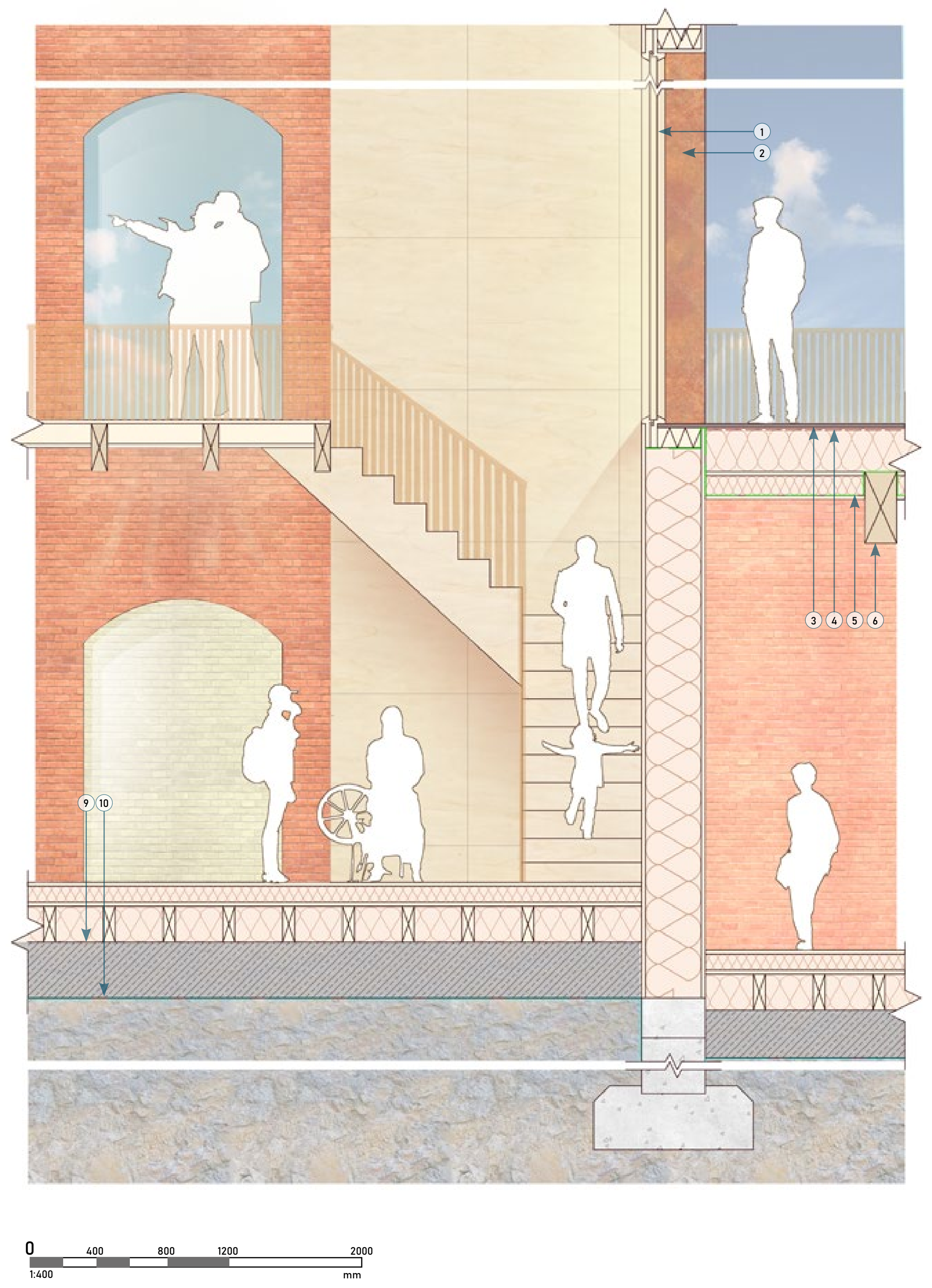





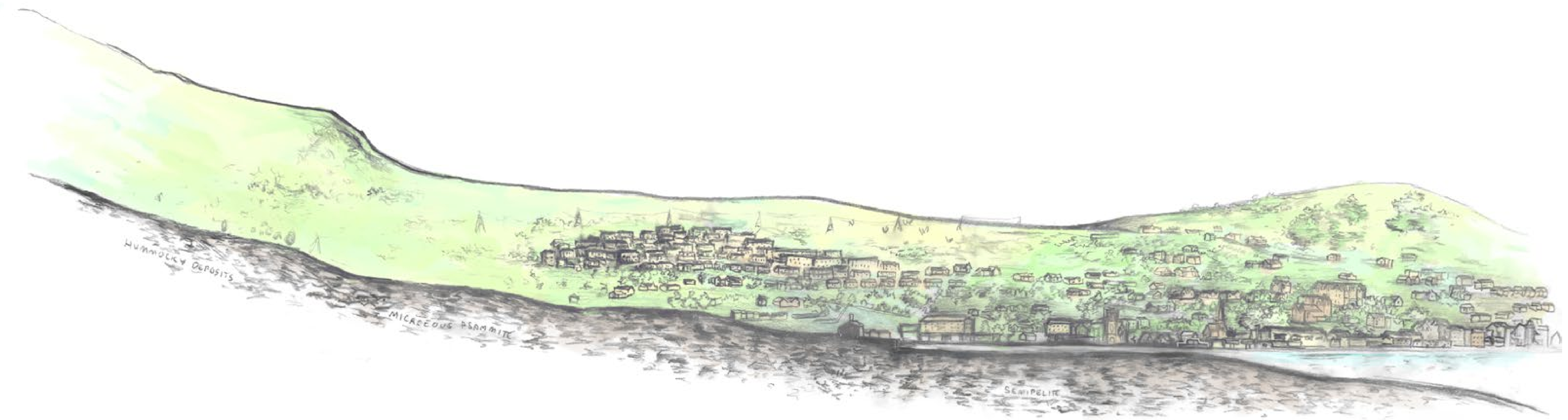


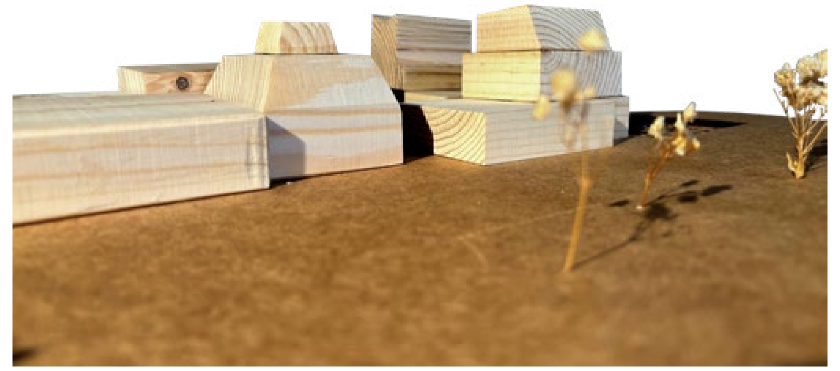




1: Double Glazing
2: Corten Steel External Cladding
3: External Tiling
4: Breather Membrane over OSB Sheathing
5: VCL
6: 400 x 150 mm Glulam Beam
7: Floor Joist
8: Hemp-Flax Insulation
9: Floor Slab
10: DPM









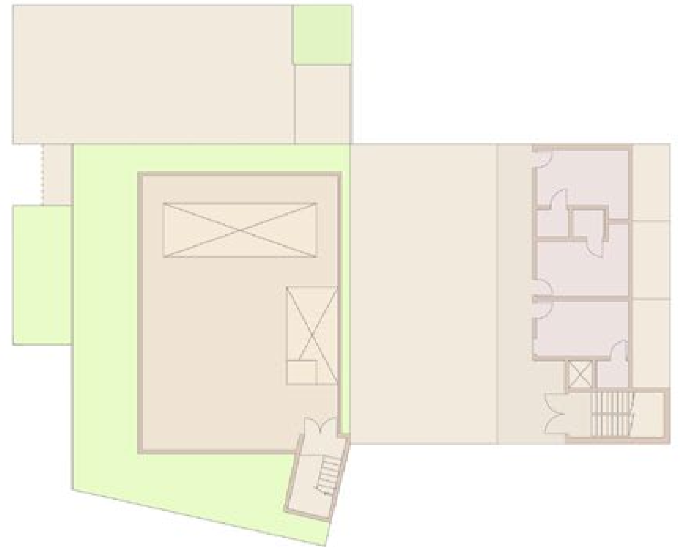


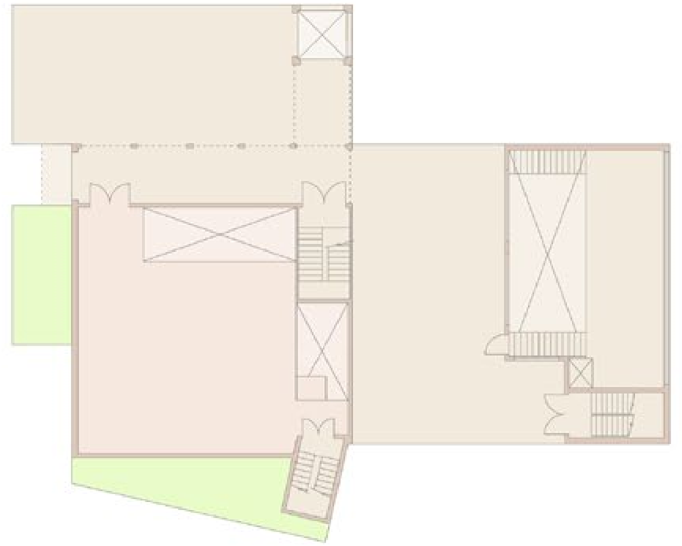


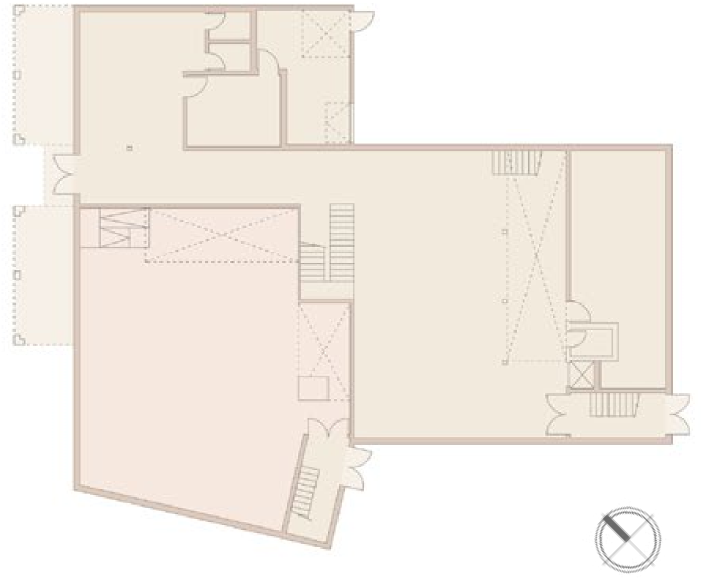


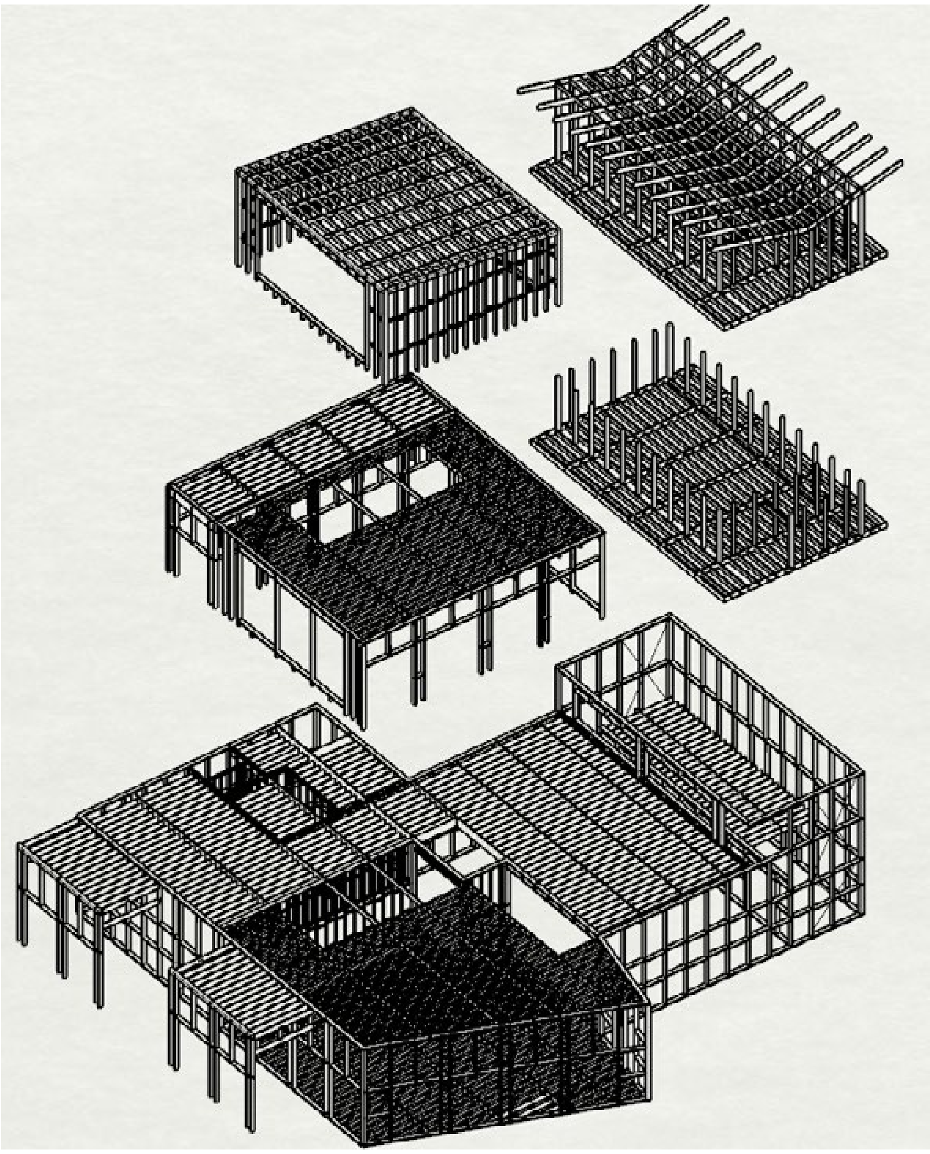


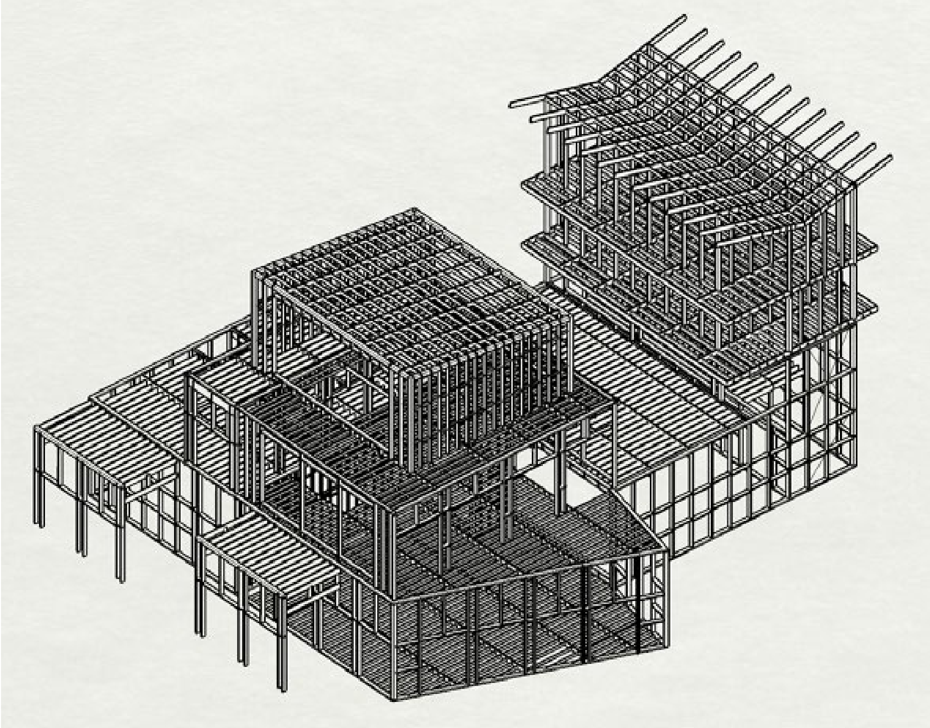






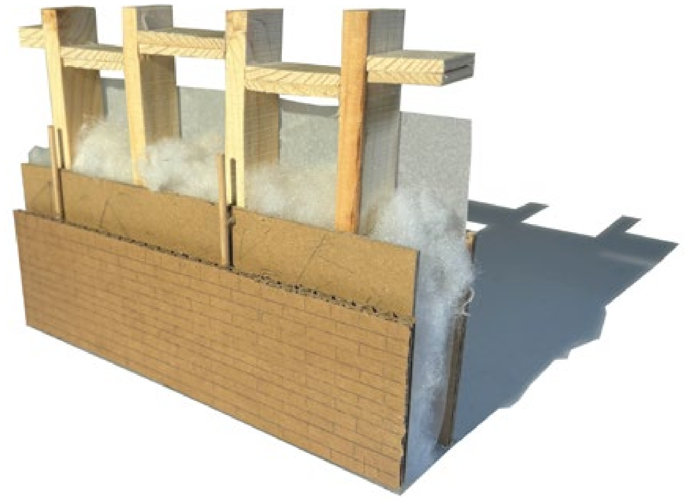












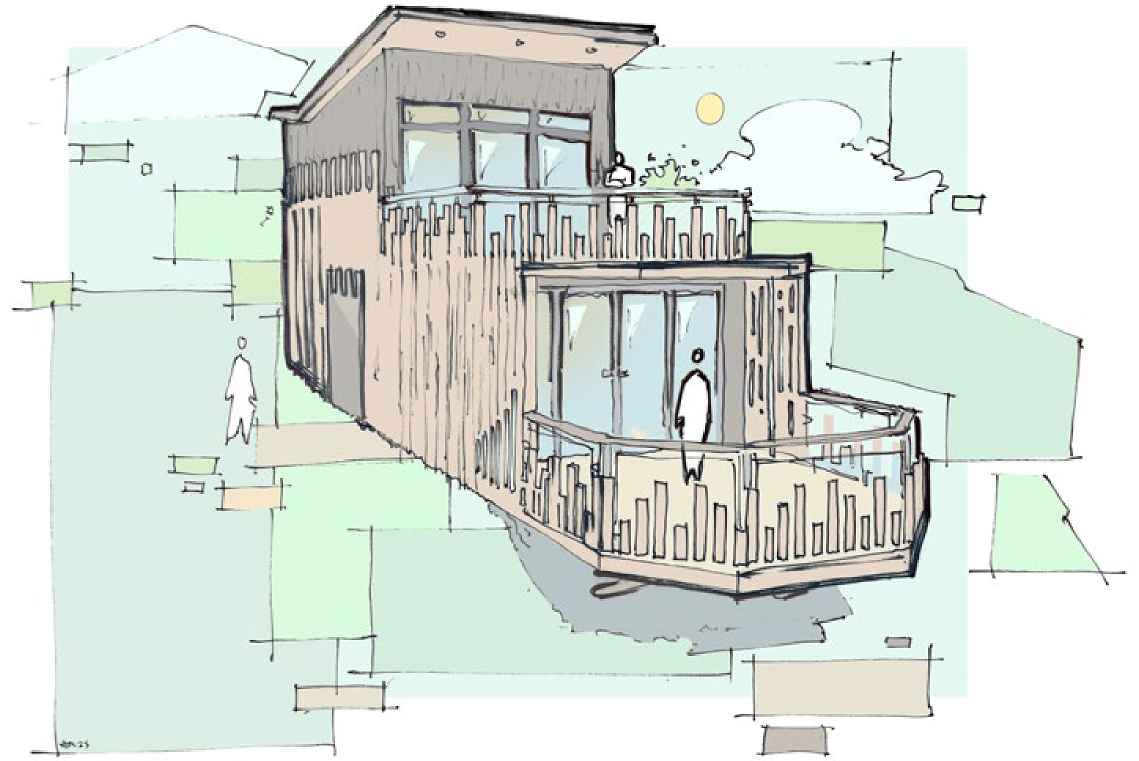
During this three-week project, we were assigned teams which contained students studying various different disciplines across the construction industry.

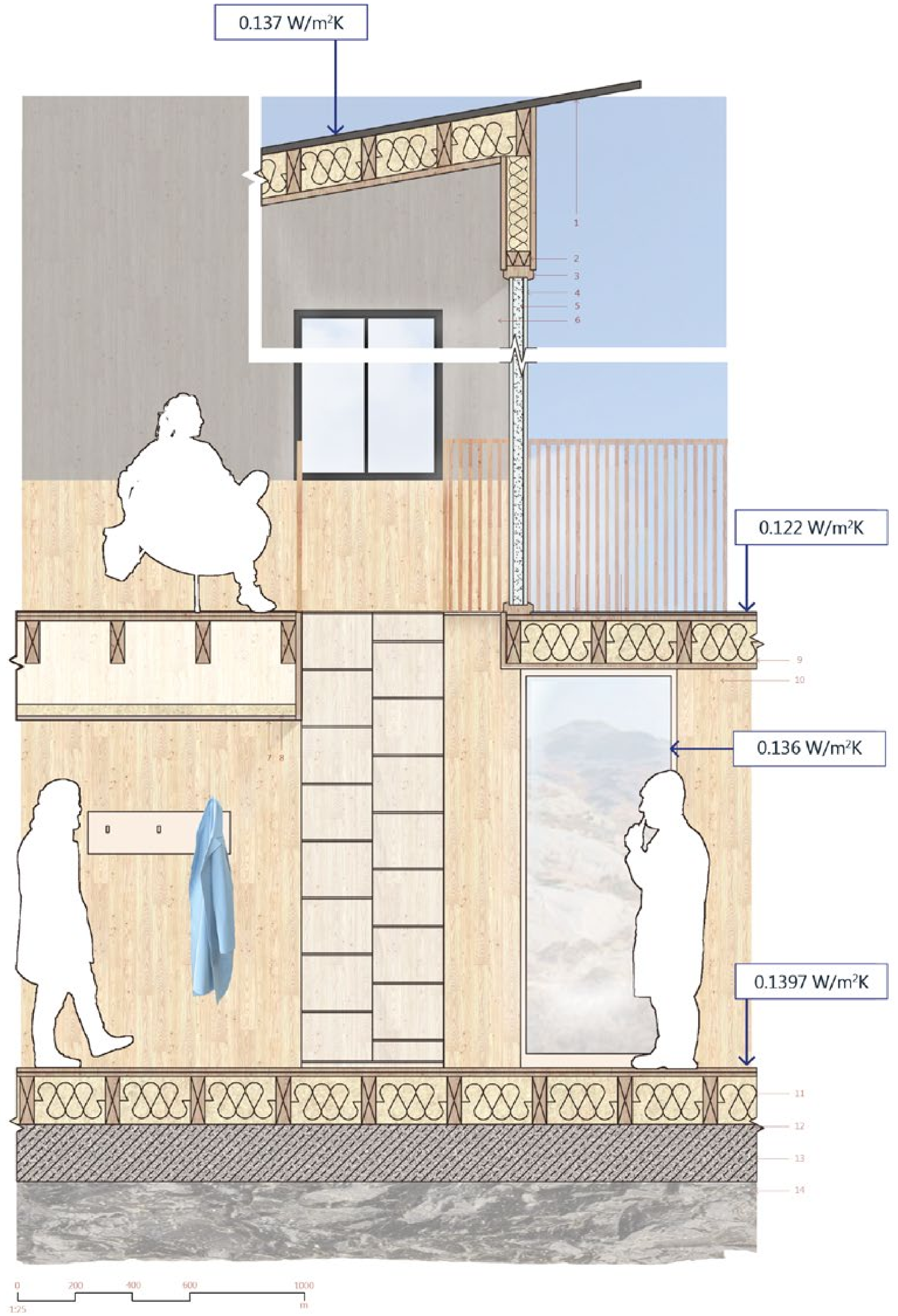
The project focused on designing a small observatory, located in Lochaber, which was based on research we had completed for an adjacent brief. Our group contained 3 Architects, 1 Structural Engineer and 1 Quantity Surveyor – a relatively small group compared to other teams which generally contained 7-9 total members. Despite this, we worked efficiently and collaboratively, resulting in a cohesive project which landed us 2nd place out of 5 groups – losing by only 1 vote – a result we were all proud of.

At the start of this project, we planned out what we wanted to achieve, which included of:

- **Passivhaus standards**, in terms of carbon costing and U-values
- A design which incorporated **a balanced work/life dynamic**
- **A 'loose-fit' design** which would be suitable for re-use under various different functions, ensuring the longevity of the building

My role in this group was helping with technical details, such as creating wall buildups (suitable for passivhaus standards), calculating u-values (cross examined with a contractor working in the industry), and overseeing the overall design.






1: 1200x800mm Corrugated Hemp Fiber Panels
2: Insulation Cap
3: Timber Window Frame
4: Double Glazing
5: 16 mm Insulative Aerogel
6: Charred Timber Internal Cladding
7: False Ceiling [2.4m]
8: 100mm Soundproofing
9: VCL
10: Douglas Fir Internal Cladding
11: 300mm
12: DPM
13: 275mm Concrete Foundation
14: Ground [Andesitic Pitchstone]

**Material list**
External Cladding – Thermowood
Insulation – Aerogel
Structural Elements – Modular Timber frame
Flooring – wood (sustainable sourced)
Internal finishes – recycled plasterboard, low VOC paint

**Maintenance**
Thermowood cladding – £250 – Every 5 years
Aerogel – NON
Timber frame units – inspection every 10 years - £250
Corten steel roof – minimal preventative rust easy yearly - £100
M&E servicing - £500

**Carbon costing**
New builds – 40000 kgco2e
New build off site – 17000 kgco2e
Ours 13160 kgco2e
100 mile radius of materials

Gross internal floor area – 77m²
Timeline of 26 weeks – Compared to size of alternative projects
Modular construction – 8 prefabricated units delivered
Costly areas Corton, Aerogel and GGBS
Build cost - £403,695
15% risk - £60,554

**Total cost - £464,249**







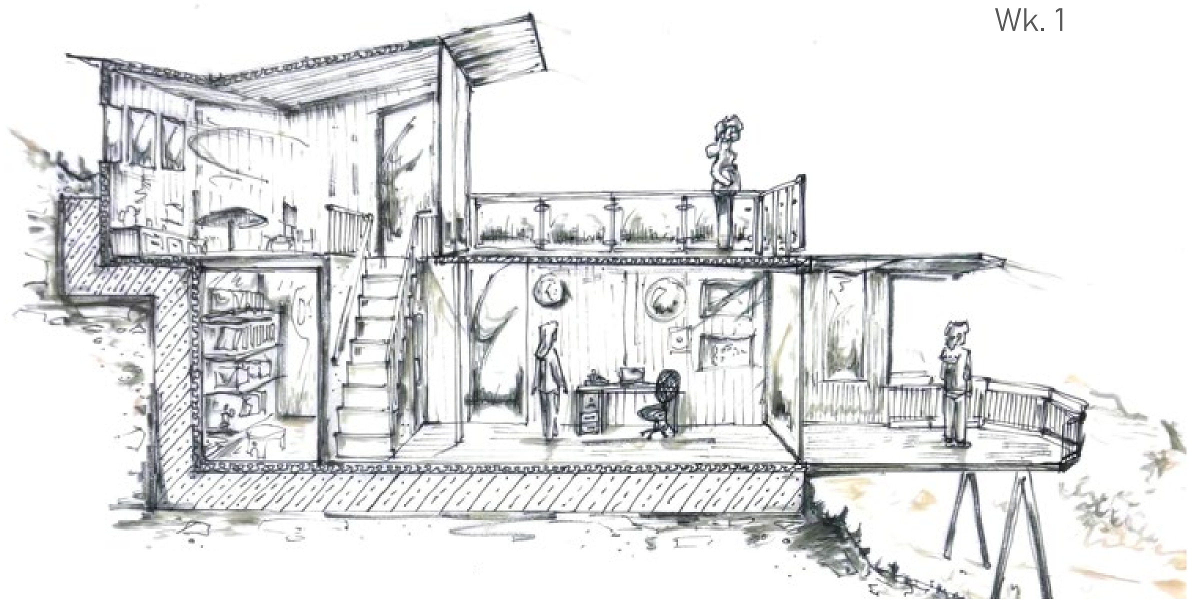


Project Showcase

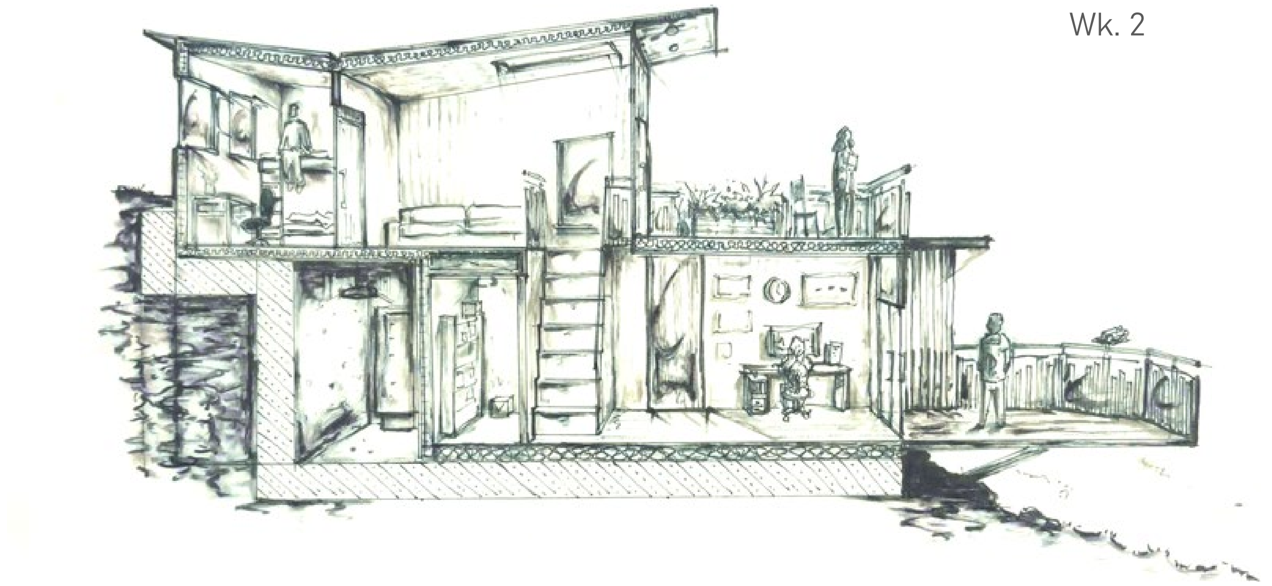




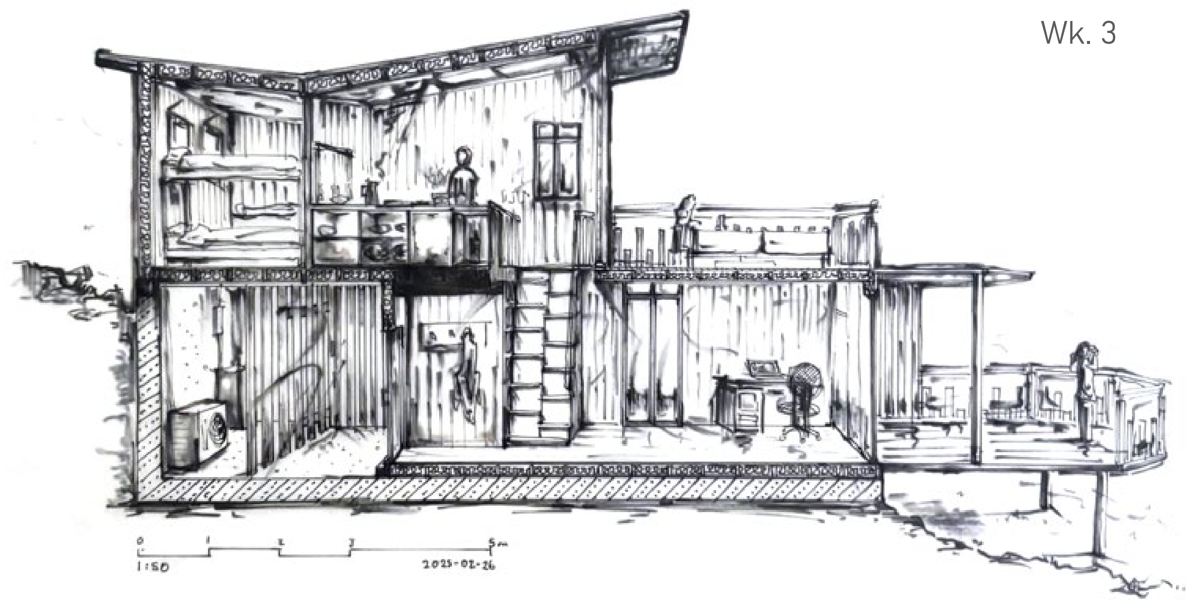
Wk. 1

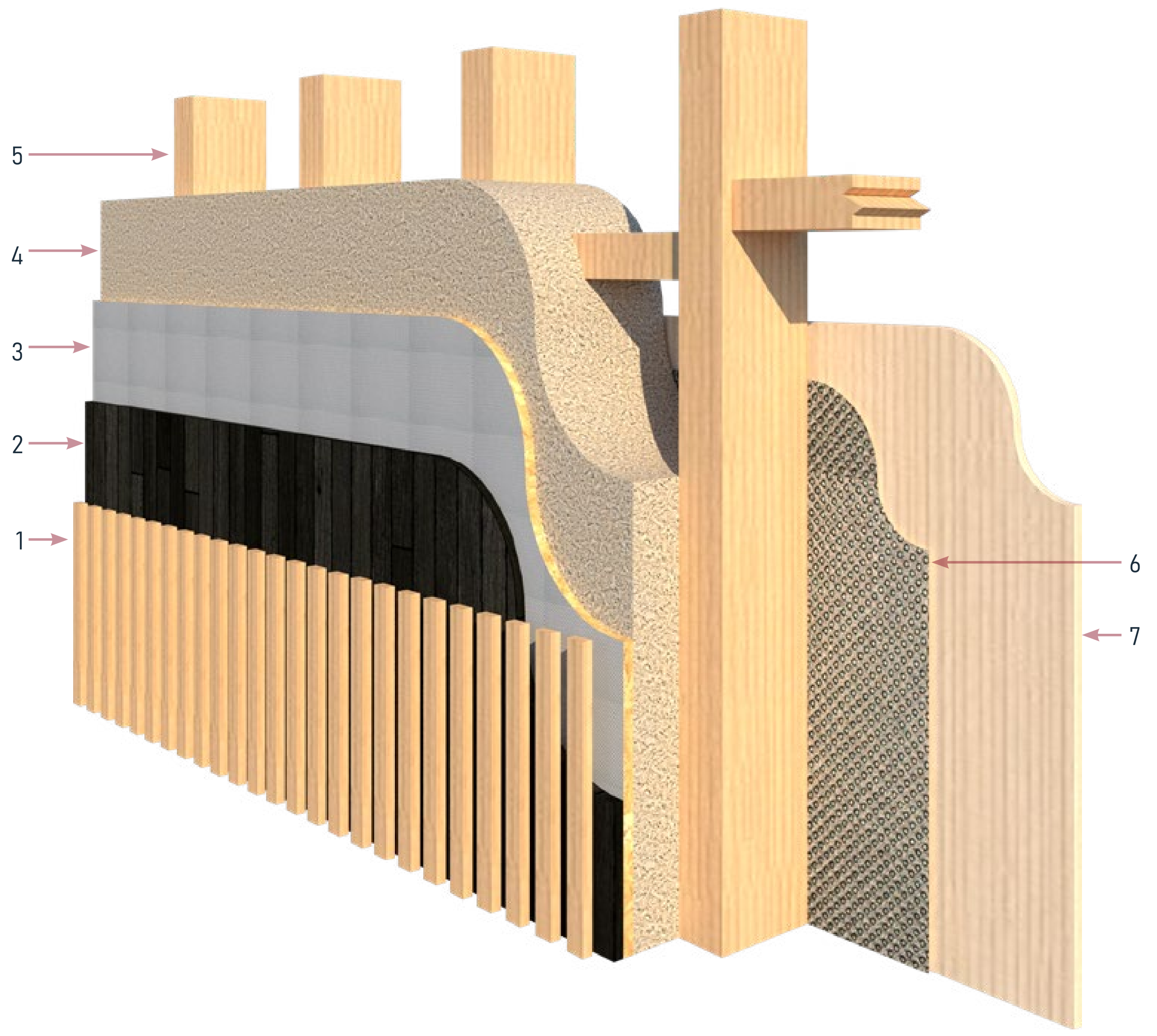


Wk. 2



Wk. 3






1: Red Cedar Timber Screen

2: Charred Timber External Cladding

3: Breather Membrane over OSB Sheathing

4: 300 mm Insulative Hempcrete (0.186 W/$m^2$K)

5: Structural Timber Frame

6: VCL

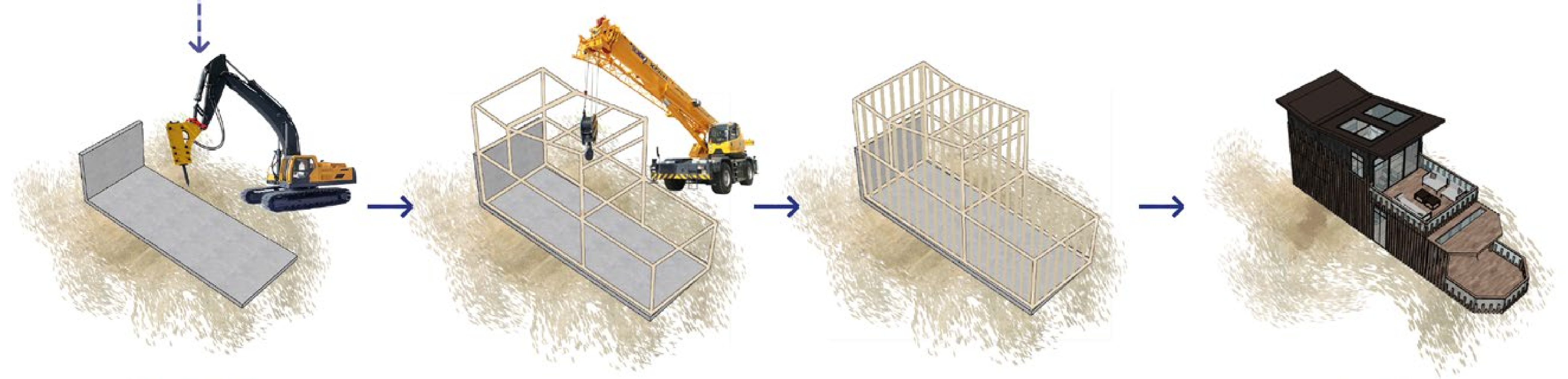
7: Douglas Fir Internal Cladding

Total U-Value = 0.136 W/$m^2$K





**Deliveries / Manufacture:**
8 week duration



**[Day 1-14]**

Excavation & Site Setup:
£100,000

Foundation:
£90,000

**[Day 15-30]**

Superstructure:
£80,000

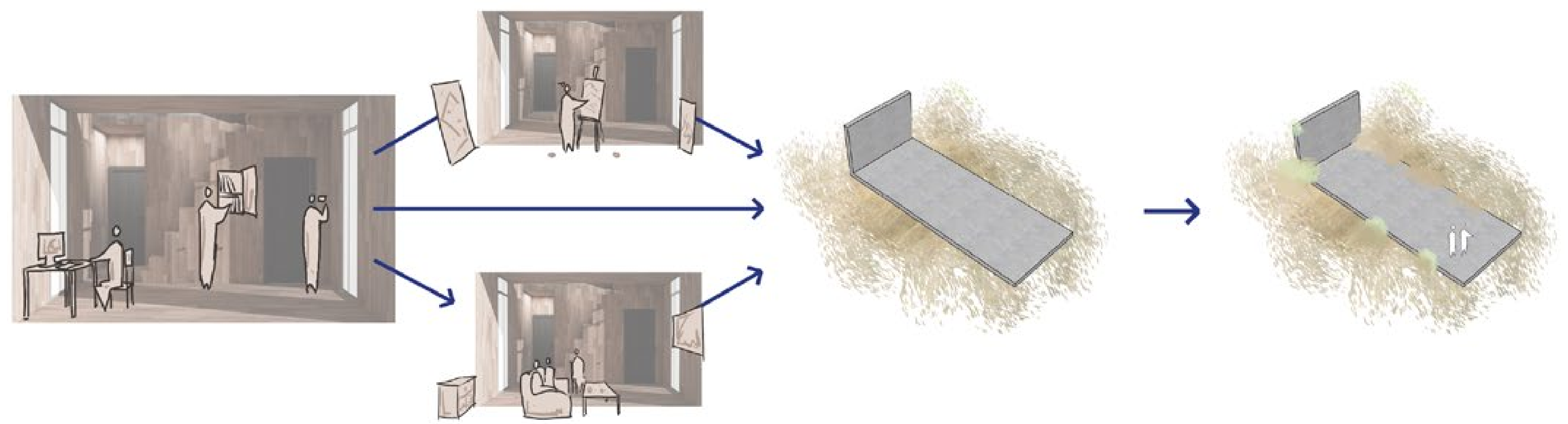
**[Day 30-65]**

Installation, M/E & Roofing:
£53,050

**[Day 66-85]**

Internal Fit Out:
£71,070

External Works:
£70,129



**Observatory** (after >25 years) — Mixed Use — **Dissassembly** — Viewing Platform

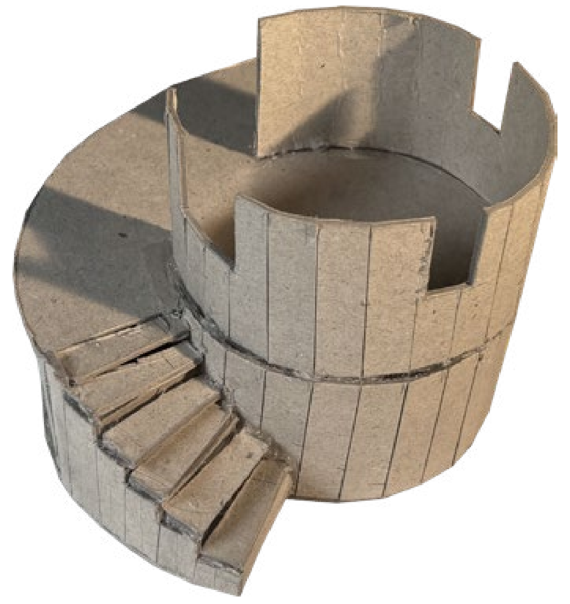
## **Studioworks 3B** (Feb ‘25 - Apr ‘25) - Grade: B3

This project is an architectural response to the evolving landscape of Ardnamurchan, where rewilding efforts, geological history, and the legacy of the Highland Clearances intersect. I chose Ben Hiant as the site due to its panoramic views, proximity to local clearances, and its symbolic relevance to my research into land use and environmental degradation. The design aims to challenge romanticized ideas of the Highlands by framing the landscape as something active and shaped by both natural and human forces.

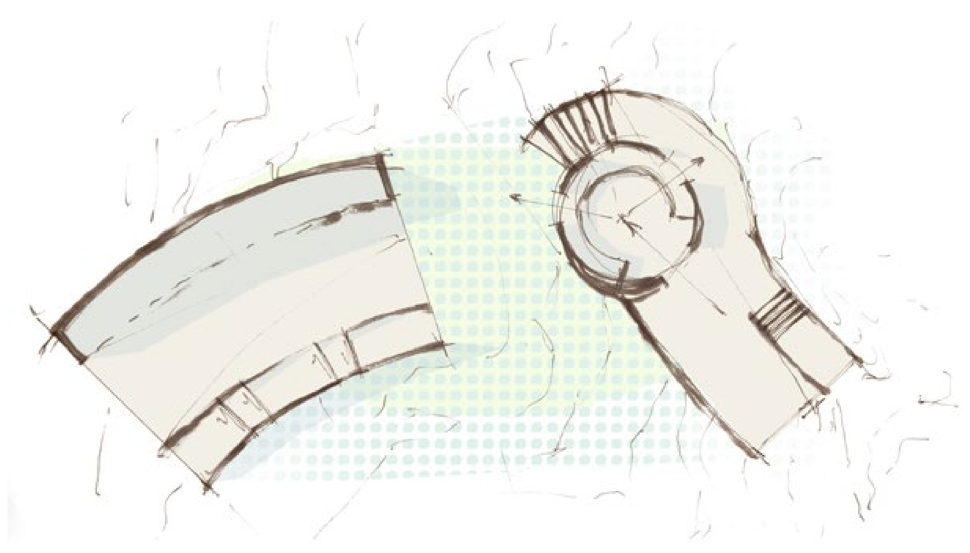
Initially conceived as an educational facility for primary pupils from the Central Belt, the intervention was designed to promote direct engagement with the Highlands, making abstract environmental issues tangible. Early iterations included internal learning and residential spaces, composed to frame views along the route to the peak. As the project progressed, I focused on minimising impact, exploring materiality, and embedding the architecture more seamlessly into the site through grounded geometry and contextual form-making.

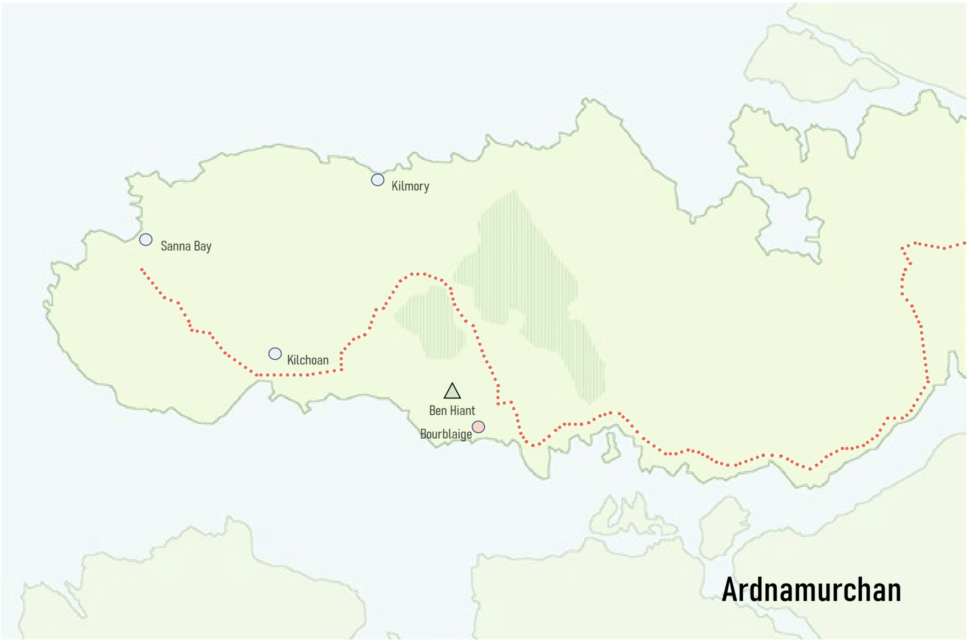
The final design is a non-operational, stone-based structure that embraces the concept of a “loose fit.” It no longer relies on internal programming, allowing for multiple future uses while maintaining its function as a learning tool and spatial marker in the landscape. This approach reduced embodied and operational energy while deepening its relationship to place—an architecture that provokes observation, invites interpretation, and reflects the layered narrative of Lochaber.





Design Showcase









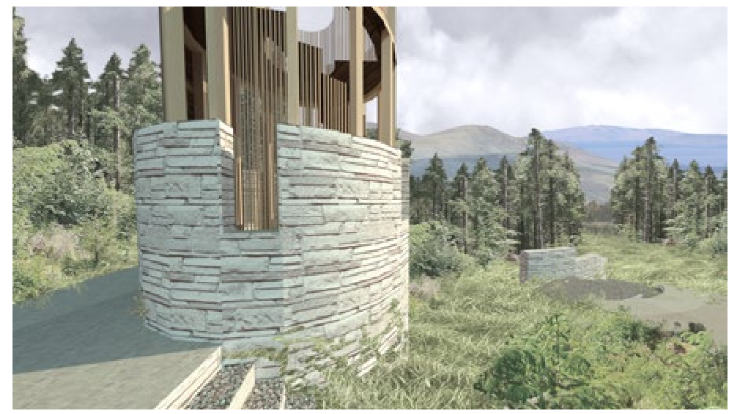




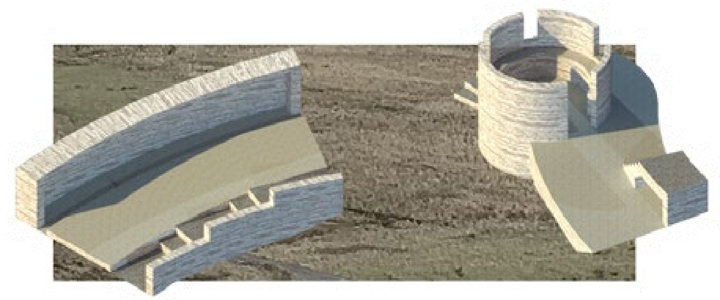






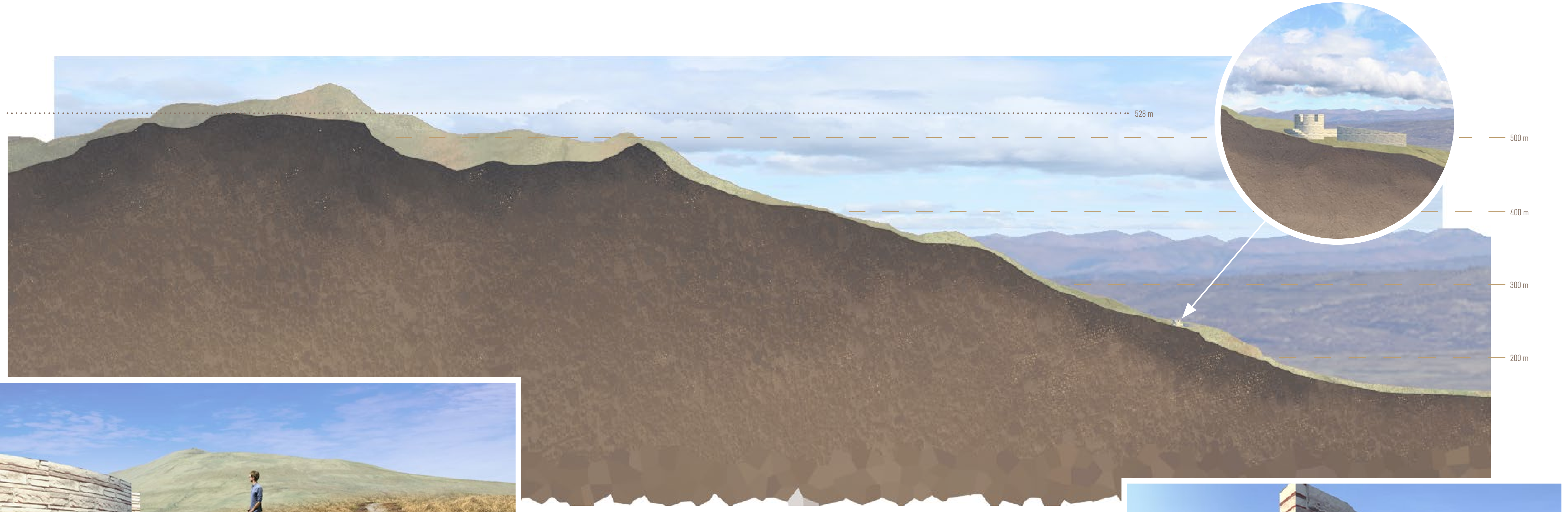











528 m
500 m
400 m
300 m
200 m





